REMARKS

New claims 28-34 have been added. Claims 1-14, 17, 19-21, 23, 26, and 27-34 are pending in the application. Reconsideration and withdrawal of the rejections are requested in view of the following amendments and remarks.

Claim 1 has been amended to recite the step of providing a heated liquid at a temperature in the range of 25-150° C onto the surface of the workpiece. New claim 28 describes a similar step with the liquid at 53-120° C. Claims 2 and 26 have been amended to recite the step that the heated solution assists in maintaining the workpiece at a temperature in the range of 55-120° C. Claim 27 has been amended to recite that the heater heats the aqueous liquid to a temperature in the range of 25-150° C before the liquid is provided onto the workpiece. New dependent claims 29-34 recite that the liquid is heated to a temperature in the range of 75 to 115° C, or 85-105° C. Support for these new claims and amendments is found at page 17 of the application.

None of the cited references teach or suggest providing a heated aqueous liquid at a temperature in the range of 25-150° C or 55-120° C onto a workpiece surface. Matsuoka is the only reference cited as teaching the use of a heated liquid, but Matsuoka only teaches using a liquid at 20 or 25° C. Indeed, Matsuoka specifically teaches away from any higher temperatures. For example, Matsuoka states the following:

> "A problem with a dry treatment using ozone is that when resists implanted at high doses are treated at relatively high temperatures, pumping, etc., takes place through heat,

making some resist residues likely to remain intact." Page 2, lines 56-58.

"Heating the substrates does not permit wet ozone to have well-enough effects, because any thin water film cannot occur even when a wet ozone-containing gas is fed." Page 3, lines 34-35.

Thus, while Matsuoka teaches that liquid may be at a temperature of 25° C, it clearly teaches away from heating the liquid to any significant degree. Indeed, 25° C is virtually room temperature. The claims, conversely, teach heating a liquid to a temperature in the range of 25-150° C or 55-120° C.

Bergman and Li also do not teach or suggest introducing ozone into a workpiece-containing environment within the now claimed temperature ranges, or at a rate of at least 90 grams per hour.

The claimed methods and apparatus achieve the advantages of both high ozone concentration at the workpiece surface, and high temperature, to provide fast reaction times, by using diffusion, rather than dissolution. While only a low amount of ozone can be dissolved within the heated liquid layer on the surface of the workpiece, large amounts of ozone can diffuse through the layer to react at the workpiece surface. Accordingly, the claimed methods and apparatus provide ozone at a rate of at least 90 gph (except for claim 28). None of the cited references, alone or in combination, teach diffusing ozone through a heated liquid layer to react at a workpiece surface. There is also no suggestion in the cited art to do so, since ozone at such a high concentration

would largely be wasted in the prior art apparatus, due to ozone's inability to effectively dissolve into a heated liquid.

In view of the foregoing, it is submitted that the claims are in condition for allowance, and a Notice of Allowance is requested.

Respectfully submitted,

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